

What is Critical Thinking?

Based in part upon Carter, Bishop, Kravits, Bradbury and Wheeler, **Keys to Success: A Supplemental Reader**, Custom Edition for University of Phoenix, Pearson Custom Publishing, Boston, 1999.

Perhaps the very first thing to be noted is that “critical thinking” is not a negative term as is too often surmised whenever the term “critical” is used in today’s culture. Quite to the contrary, “Critical Thinking” is a very positive enterprise which requires care, patience, attention and focus as well as the discipline and dedication which allow the preceding adjectives to actually be in operation.

But, let’s use a more simple definition:

Critical Thinking is important thinking that involves asking questions.

There are some terms used to describe what these questions are. These are called the five W’s and the one H. Simply, these are who, what, where, when and why accompanied by how.

Asking questions is absolutely crucial to critical thinking. And, learning to ask the right questions is even more crucial. This is because the answers we get are only to the questions we have asked. And, what usually happens is that the answers we get serve the purpose of leading to even better questions. It is with better questions that we get better answers which lead to even better questions and even better answers.

What we are addressing is a “process” which is very akin to the developments of science. In the scientific community, the understanding is that no one single scientist or group of scientists at any one time will come to a complete and conclusive understanding of the particular science being pursued (biology, chemistry and physics (as basic particulars). Rather it is understood that all science is interrelated, and that the ultimate goal is a GUT. This is the acronym for Grand Unifying Theory which would be that hypothesis which offers the very best explanation available for all the phenomena which can be assessed in the basic natural sciences.

And, the goal of the scientific community is to establish a transformation of the information derived from its investigations (which are questions) into information which can be useful (which are answers).

Therefore, we must note that a person who does not think critically tends to accept or reject information or ideas without examining them. That is, such a person asks no questions. [The Socratic maxim, to which I subscribe, is “the unexamined life is not worth living.” I offer two corollaries to this maxim: (1) “the unexamined opinion is not worth having or expressing,” and, (2) “the unexamined religion is not worth believing or practicing.”]

Now, it is important to recognize that the very first step in critical thinking is to ask questions. And, it is important to ask those questions without judging the answers; that is, what initially occurs is a quest for responses to questions. This is akin to the abductive process identified by Charles S. Peirce in which what one is doing is asking “what if?” in a mood of musement, or playful intellectual activity. The point is not to stifle the responses – each of which becomes a hypothesis to be tested.

In a very real sense, the testing amounts to choosing from among the responses those responses which are as complete and accurate as possible (within the context of the questions being asked). It is in this choice among responses that the critical thinking process engages in evaluation, assessment and judgement.

Anyone can learn to think critically.

This is because critical thinking (from another perspective) involves comparing new information with the information one already has. Of course, this implies that a solid base of information or knowledge is imperative for one to be able to think critically in the broad sense. But, anyone can think critically no matter the initial knowledge base provided new information is compared with old information, and examined with care and patience as noted in the opening paragraph of this essay.

Questions Asked in Critical Thinking

What types of questions do critical thinkers ask?

1. Recall – what does one already know on the subject or issue being addressed;
2. Difference – is there data and information which differs from what one already knows?
3. Idea to Example – how can that data or information be presented in descriptive fashion by using examples?
4. Example to Idea – what does that descriptive example indicate as a proper and necessary conclusion?
5. Similarity – what other data, information and descriptive examples are there along the same lines as the subject or issue being addressed; [***This is the argument from analogy which may be the most crucial way we learn.***]
6. Cause and Effect – What is the true cause and what is the true effect? [Just because one thing occurs after another does not establish cause and effect. Just because things seem to be related does not mean that they are related. This is the philosophical issue of sufficient and necessary. If there is a cause which has a real effect, that effect is necessarily related to that cause. But, there may be cases in which the cause is sufficient to create an effect, but in which the effect does not necessarily occur. This is an important distinction in critical thinking. This analysis is derived from David Hume.]
7. Evaluation – having examined difference and similarity, cause and effect, and the relationship of what would follow as an example from an idea, and what idea one might draw from that example, one is in a position to determine the

value and applicability of the conclusion which should be drawn from the evidence assessed. {I use the verb “should” here because what is desired when one thinks critically is that one accepts the conclusions indicated by the evidence examined. One who imposes a conclusion upon the data is not thinking critically in any fashion.} [It is important to repeat here that the movement from example to idea must be done very carefully, and must be done in the light of an adequate amount of evidence. A single example does not allow the generalization of an idea. Rather, a single case is anecdotal evidence which may prove valuable once the generalization from the evidence can be established. Anecdotal evidence is useful in demonstrating the applicability of the generalization itself, and also in demonstrating that the generalization does not address all instances and examples.]

These, it should be noted, are the seven mind actions addressed in my essay of “What is Thinking?”

The Benefits of Critical Thinking

Some examples of the benefits of critical thinking are:

1. One will increase one’s ability to perform thinking processes that will help in any kind of school, career or life goal.
2. One can produce knowledge rather than simply reproduce knowledge. [The cliché is that there is no new knowledge, but rather only extensions of what the human species already knew. This means that we borrow from our predecessors. Critical thinking means that we use what our predecessors provided, that we do indeed borrow that knowledge, that we do indeed extend that knowledge into what necessarily follows, but – critical thinking means that one also engages in the creative process of “what if?”]
3. One can be a valuable person in each and every role within one’s life – from child to parent to partner (in life or in business) to employee to manager to ultimate owner or CEO. [I’d like to quote myself here: “true communication means that management is as accountable to the workers as management claims the workers are responsible to management.” Critical thinking demands that both sides of this equation are equal.]
4. One can be more creative. [An essential ingredient of the critical thinking process is being comfortable and confident in asking the “what if?” question. While critical thinking may seem to be an enterprise that involves only the analytical functions of our cerebrum, the truth is that critical thinking also frees the intuitive and creative functions of our cerebrum so that these may actually engage in the fullness of that intuitive and creative capacity.]

The Process of Critical Thinking

The process of critical thinking can best be illustrated by addressing the two most crucial thinking processes. These are problem solving and decision making. As these are

described in step-by-step process form, a simple comparison will note that the same thing is being said twice – only in different formats.

Problem Solving

1. State the problem clearly. Get the fact, the details and the context. Unless this is done, one will not know what problem is to be solved.
2. Analyze the problem. Are there cause(s) and effect(s)? Are these actual or surmised relationships? What is the evidence that the cause(s) and the effect(s) are related? [If there is no evidence of a relationship between the supposed cause and the supposed effect, one is addressing the wrong problem.]
3. Brainstorm in two directions. Focus on causes to identify necessary effects. Focus on effects and reason backwards to what would/could have been the necessary cause. If one arrives at the same conclusion using both directions, it is likely that one has hit upon the solution. However, the evidence may not be conclusive, in which case one must address the alternative solutions.
4. Examine each solution. What are the positive or negative outcomes of each solution? What are the *pros* and *cons* of each solution? Evaluate, evaluate, evaluate.
5. Choose and execute one solution one believes is best. This is where “the rubber meets the road”. If this is the best solution, the forecasted outcomes will be there to a good degree. If this is not the best solution, start over.
6. Evaluate the effects of the solution one acted upon. This is a “tricky” part because most of us are reluctant to engage in significant self-analysis of what we might have thought through or done better. But, as objective as this evaluation can be, so more likely will be the outcomes realized. In short, what alternatives would have helped in achieving the desired solution or outcome?
7. Engage in perpetual refinement of the solution. Once one is on the “right track” to an outcome which is desirable and effective, then one simply engages in an effort to make the outcomes even better. Of course, it is crucial that this “tweaking” not change the course from cause to effect. One must always think critically to note what it was by way of cause and process that led to the effect one sought.

Decision Making

1. Decide on a goal in the sense of “what is the problem to be solved?”
2. Establish needs. Not wants. This amounts to a recall of what is really important to the situation or issue at hand. Relevance is the key term.
3. Name, investigate and evaluate the available options. What are the facts associated with each, and what are the likely outcomes of pursuing the respective options?
4. Evaluate the potential outcomes.
5. Make a choice for a plan of action and pursue it.

6. Evaluate the result.
7. Make the necessary modifications in the plan of action. Do this continuously.

So, **What is Critical Thinking?**

In a sense, answering this question is very simple. Critical Thinking is learning how to make life work for oneself. But, that simple answer implies so much more. This is because Critical Thinking always begins with self-analysis before it addresses “other-analysis” in terms of situations, events or people. Accurate self-analysis will lead to a correct placement of oneself within the context of “otherness” – situations, events and people. One then needs to evaluate those situations, events and people with the same excruciating spotlight one focuses upon oneself. It is not only unrealistic not to focus the same analytical spotlight upon oneself that one focuses upon others, and vice-versa, it simply is unfair and inaccurate. Unless all judgements are made on the basis of the same criteria, one cannot make correct judgements.

Critical thinking also is the application of the truth learned to actual living. Unless there exists a continuity and coherence between thought, word and deed, there exists a contradiction. Contradiction is evidence that critical thinking has not occurred, has not been applied, or both has not occurred and was not applied.

Thus, critical thinking is evidenced in the manner in which people live through the words and deeds which manifest their thoughts.

In short, the test is always a public test.